

## DEPARTMENT OF FOODS AND NUTRITION

### PROGRAMME OUTCOMES AND COURSE OUTCOMES OF UNDER GRADUATE & POST GRADUATE PROGRAMME (2022 ONWARDS)

NAME OF THE PROGRAMME: B.Sc Nutrition, FSM & Dietetics – PROGRAMME OUTCOME	
PO1	1. Emerge with competency in the subject of Nutrition and Dietetics and apply the knowledge to cater to the needs of Society / Employer / Institution / Own Business /Enterprise
PO2	2. Imbibe analytical/ critical/ logical/ innovative thinking skills in the field of Food Processing, Community Nutrition and Clinical Nutrition.
PO3	3. Articulate academic understanding, entrepreneurship, community role and skill development by practicing in the state-of-the-art nutrition laboratory and attain empowerment through food industry, health clinics and public sectors.

NAME OF THE PROGRAMME: M.Sc Foods & Nutrition – PROGRAMME OUTCOME	
PO1	1. Strengthens the Competent Graduates, successful Entrepreneurs and energized Professionals to take up careers in academics, Health Care Centers and Food Processing Industries.
PO2	2. Helps to transpire as a Diet Counsellor, Nutrition/ Health communicator for creating awareness in the society through various Communication Strategies in Nutrition Education emphasizing Information Technology.
PO3	3. Helps to transpire as a Diet Counsellor, Nutrition/ Health communicator for creating awareness in the society through various Communication Strategies in Nutrition Education emphasizing Information Technology

<b>NAME OF THE PROGRAMME: B.Sc NUTRITION, FSM &amp; DIETETICS – COURSE OUTCOMES</b>	
<b>SEMESTER I</b>	
<b>FOOD MICROBIOLOGY</b>	<ol style="list-style-type: none"> <li>1. Know the different types and morphology of microorganisms</li> <li>2. Understand various specialized techniques in food processing and preservation</li> <li>3. Acquainted with various sterilization techniques</li> <li>4. Able to preserve the non-perishable foods from microbial contamination and spoilage</li> <li>5. Able to differentiate food poisoning and food borne infections</li> </ol>
<b>SEMESTER II</b>	
<b>HUMAN PHYSIOLOGY</b>	<ol style="list-style-type: none"> <li>1. Able to analyze hematological parameters and blood pressure</li> <li>2. Understand the relationship between a cell's structure and its function</li> <li>3. Relate the structure with functions of the tissues and organs</li> <li>4. Comprehend the structure and functions of the various organ systems of the body</li> <li>5. Recognize the clinical symptoms of nutritional deficiencies based on anatomical considerations</li> </ol>
<b>SEMESTER III</b>	
<b>NUTRITIONAL BIOCHEMISTRY</b>	<ol style="list-style-type: none"> <li>1. Understand the basic concepts of biochemistry</li> <li>2. Gain knowledge on metabolism of carbohydrate, protein and lipids</li> <li>3. Know the mechanism of enzyme action</li> <li>4. Understand the inborn errors of metabolism</li> </ol>
<b>BAKERY AND CONFECTIONARY</b>	<ol style="list-style-type: none"> <li>1. Understanding about ingredients used for baking</li> <li>2. Gain knowledge about the appropriate preparation and presentation of baked products</li> <li>3. Understand preparation , type of icing and pastries products</li> <li>4. Able to plan to set up a bakery unit</li> </ol>
<b>NME-HEALTH AND FITNESS</b>	<ol style="list-style-type: none"> <li>1. Apply behavior change theories to assess and self -reflect on health and fitness status</li> <li>2. Apply and evaluate wellness concepts that promote health and wellness</li> <li>3. Explore activity options to maintain and/or improve lifelong health and fitness</li> </ol>
<b>SEMESTER IV</b>	
<b>FOOD SCIENCE</b>	<ol style="list-style-type: none"> <li>1. Understand the food groups and their functions</li> <li>2. Acquire knowledge on different methods of cooking</li> <li>3. Apply process of different foods</li> <li>4. Use combination of foods in the development of food products</li> <li>5. Understand the principles of sensory analysis</li> </ol>
<b>HUMAN NUTRITION</b>	<ol style="list-style-type: none"> <li>1. Apply knowledge of biochemistry and physiology to human nutrient metabolism</li> <li>2. Gain knowledge on the role of nutrition for health and wellness</li> </ol>

	3. Able to find the functions of specific nutrients in maintaining health
<b>FOOD PRESERVATION</b>	<ol style="list-style-type: none"> <li>1. Apply major food preservation techniques and principles</li> <li>2. Classify the various types of food spoilage</li> <li>3. Analyze and evaluate novel food processing methods</li> <li>4. Distinguish between chemical preservation and fermentation</li> <li>5. Identify and evaluate the suitability of processing for various foods</li> </ol>
<b>FOOD PRODUCT DEVELOPMENT AND MARKETING STRATEGIES</b>	<ol style="list-style-type: none"> <li>1. Apply the principles of quality assurance, and food safety to a food product design</li> <li>2. Gain skills to develop a new food product</li> <li>3. Produce elements of HACCP-based food safety program that is applicable to the production of a new food product</li> <li>4. Work collaboratively with others on a major investigative project</li> </ol>
<b>(NME) NUTRITION FOR THE FAMILY</b>	<ol style="list-style-type: none"> <li>1. Able to classify food groups based their functions</li> <li>2. Understand weaning and supplementary foods for infants</li> <li>3. Able to plan and prepare packed lunch</li> </ol>
<b>SEMESTER V</b>	
<b>DIETETICS I</b>	<ol style="list-style-type: none"> <li>1. Able to understand principles of diet therapy</li> <li>2. Able to modify normal diet for therapeutic purpose</li> <li>3. Understand the role of dietitian</li> <li>4. Gain knowledge about etiology, risk factors and clinical features of various disease conditions</li> </ol>
<b>NUTRITIONAL THROUGH LIFE CYCLE</b>	<ol style="list-style-type: none"> <li>1. Know about growth and development from infancy to adolescent Understand nutrition requirement during pregnancy and lactation</li> <li>2. Able to plan and prepare a menu for different age group based on RDA</li> <li>3. Able to fulfill the nutritional needs of various age groups</li> </ol>
<b>COMMUNITY NUTRITION</b>	<ol style="list-style-type: none"> <li>1. Understand the role of interventions to enhance wellness in diverse individuals and groups</li> <li>2. Skills to develop an educational program for a target population</li> <li>3. Capable to formulate new food products for a target group</li> <li>4. Evaluate impact of nutritional awareness program on Nutritional and health status.</li> </ol>
<b>HOSPITAL FOOD SERVICE ADMINISTRATION</b>	<ol style="list-style-type: none"> <li>1. Planning of menu to accommodate the nutritional, dietary and medical needs, cultural and religious requirements and personal preferences of clients</li> <li>2. Manage nutritional needs of diverse clients in healthcare and other food service settings in collaboration with or under the direction of health care professionals</li> <li>3. Promote food and nutrition services and healthy living to support marketing plans and the general well-being of clients</li> </ol>
<b>INTERNSHIP</b>	<ol style="list-style-type: none"> <li>1. Gain skill in planning therapeutic diets</li> <li>2. Ability to be a health professional</li> <li>3. Apply the knowledge for diet counseling</li> <li>4. Competent to manage catering outlet</li> </ol>

	5. Skills to imitate an entrepreneurship venture
<b>SEMESTER VI</b>	
<b>DIETETICS II</b>	<ol style="list-style-type: none"> <li>1. Gain knowledge on the role of diet therapy for various disease conditions</li> <li>2. Apply the knowledge in planning preparation and distribution of therapeutic diets for various disease conditions</li> <li>3. Enable to counsel related to the dietary management</li> <li>4. Equip to become a dietitian on hospital industries.</li> </ol>
<b>FOOD SERVICE MANAGEMENT</b>	<ol style="list-style-type: none"> <li>1. Establish a food service unit</li> <li>2. Manage human resources and solve problems with remedial measures</li> <li>3. Analyze and implement quality control in food service institution</li> <li>4. Promote the product in the market</li> </ol>
<b>HUMAN DEVELOPMENT AND COUNSELLING</b>	<ol style="list-style-type: none"> <li>1. Understand the principles of studying growth and development</li> <li>2. Recognize the eight stages of human life span</li> <li>3. Know the concept of prenatal and postnatal care</li> <li>4. Understand the physical and psychological changes in old age</li> </ol>
<b>FOOD STANDARD AND QUALITY CONTROL</b>	<ol style="list-style-type: none"> <li>1. Understand the specification and standards for different products</li> <li>2. Comprehend the knowledge gained on food laws and food safety regulations at regional and national level</li> <li>3. Monitor and evaluate food laws and standards in food service industry</li> <li>4. Acquire knowledge on food hazards and food adulteration</li> </ol>
<b>NUTRACEUTICALS AND NUTRIGENOMICS</b>	<ol style="list-style-type: none"> <li>1. Understand the developments in the field of nutraceuticals and nutrigenomics</li> <li>2. Comprehend the components of functional foods and foods containing of \ nutraceuticals</li> <li>3. Know the importance of probiotics and prebiotics in human health</li> <li>4. Understanding the effects of nutrients in molecular level in the body and the effect of phytochemicals in disease in disease conditions</li> <li>5. Articulate and advocate the principle of nutrigenomics in controlling life style disease</li> </ol>
<b>PERSPECTIVES OF HOME SCIENCE</b>	<ol style="list-style-type: none"> <li>1. Identify good design , list their goals and values, set their standards</li> <li>2. Enlist the principles of diet therapy and functioning of food service institution</li> <li>3. Comprehend the key aspects of human growth and development and realize the importance of mastering developmental tasks of each life span stage</li> <li>4. Understand the concept of extension education and its importance</li> </ol>

<b>NAME OF THE PROGRAMME: M.Sc FOODS AND NUTRITION - COURSE OUTCOMES</b>	
<b>SEMESTER –I</b>	
<b>ADVANCED PHYSIOLOGY</b>	<ol style="list-style-type: none"> <li>1. Understand the basic tenets of human physiology</li> <li>2. Acquire skills in measurement of blood pressure, ECG, grouping of blood</li> <li>3. Comprehend the role of digestive juices and hormones and the structure and functions of nerves</li> <li>4. Enumerate the process of gaseous exchange and urine formation and functions and secretion of</li> <li>5. hormones</li> <li>6. Apply knowledge gained in physiology to nutrition and health</li> </ol>
<b>ADVANCED FOOD SCIENCE</b>	<ol style="list-style-type: none"> <li>1. Gain knowledge on physio chemical changes in food and factors affecting the quality and</li> <li>2. quantity of nutrients</li> <li>3. Learn the structure and properties of food components □ Enlighten with techniques of food science to be applied in formulation and development</li> <li>4. of new food products ,normal and therapeutic foods</li> <li>5. Knowledge about food additives and limitations and application of food additives in food</li> <li>6. Industry</li> <li>7. Able to discuss the changes that takes place in fats and oils on heating and preventive</li> <li>8. measure to overcome the undesirable changes that takes place in fats like rancidity and</li> <li>9. decomposition of triglycerides</li> </ol>
<b>ESSENTIAL OF MACRONUTRIENTS</b>	<ol style="list-style-type: none"> <li>1. Understand the role of energy in various physiological conditions of the body.</li> <li>2. Know the nutritional significance and health benefits of macronutrients.</li> <li>3. Explore the role of glucose, dietary fibre, aminoacids and fatty acids in human nutrition and disease.</li> <li>4. Acquire skills to evaluate protein quality</li> <li>5. Comprehend on the water balance and assessment of hydration status.</li> </ol>
<b>CORE ELECTIVE A.HEALTH AND FITNESS</b>	<ol style="list-style-type: none"> <li>1. Understand Concept of Fitness Training</li> <li>2. Foster Fitness Skills</li> <li>3. Prevent and Manage Lifestyle related Disorders</li> <li>4. Utilise exercise in Stress and Health Management</li> <li>5. Gain the Technical Ability to run Fitness Centres</li> </ol>
<b>B. FOOD HYGEINE AND SANITATION</b>	<ol style="list-style-type: none"> <li>1. Understand the national and international programmes and laws on food safety and Standards</li> <li>2. Recognize the role of food handlers, food safety officers and health personnel</li> <li>3. Master the standards followed for food safety</li> </ol>

	<ol style="list-style-type: none"> <li>4. Appreciate the importance of personnel and environmental hygiene</li> <li>5. For hygienic practices; sanitary handling of food.</li> </ol>
<b>C.FOOD PROCESSING</b>	<ol style="list-style-type: none"> <li>1. Know the principles of preservation behind the methods of preservation.</li> <li>2. Understand the stages of sugar cookery, quality of pectin and acidity in the development</li> <li>3. of preserved fruit products.</li> <li>4. Acquire skills to formulate fruits based preserved products with value addition for nutritional benefits</li> </ol>
<b>OPEN ELECTIVE A.BASIC FOOD SCIENCE</b>	<ol style="list-style-type: none"> <li>1. Understand the food groups and their functions.</li> <li>2. Acquire knowledge on different methods of cooking</li> <li>3. Apply process of different foods</li> <li>4. Use combination of foods in the development of food products.</li> <li>5. Identify and control adulterants in various foods and evaluate food quality.</li> </ol>
<b>C.NUTRACEUTICALS</b>	<ol style="list-style-type: none"> <li>1. Understand the developments in the field of nutraceuticals and nutrigenomics.</li> <li>2. Comprehend the components of functional foods and foods containing nutraceuticals</li> <li>3. Know the importance of probiotics and prebiotics in human health</li> <li>4. Understanding the effects of nutrients in molecular level process in the body and the</li> <li>5. Effect of phytochemicals in disease conditions.</li> <li>6. Articulate and advocate the principle of nutrigenomics in controlling life style diseases.</li> </ol>
<b>SEMESTER II</b>	
<b>ESSENTIAL OF MICRONUTRIENTS</b>	<ol style="list-style-type: none"> <li>1. Gain in depth knowledge on the physiological and metabolic role of Vitamins and</li> <li>2. minerals</li> <li>3. Outline the role of vitamins in health and disease.</li> <li>4. Assess the physiological action of vitamins and minerals.</li> <li>5. Acquire in depth knowledge of macro and micro minerals and their role in human health and diseases.</li> <li>6. Enable to understand the inter relationship between vitamins and minerals.</li> </ol>
<b>NUTRITION THROUGH LIFE CYCLE</b>	<ol style="list-style-type: none"> <li>1. Identify the nutritional deficiency symptoms among the population</li> <li>2. Prevent and alleviate nutritional deficiencies common among population</li> <li>3. Gain knowledge to formulate weaning foods, packed lunch and age/activity specific</li> <li>4. diets adequate in quality and quantity</li> <li>5. Understand and tackle age specific food related problems and</li> </ol>

	eating behaviours
FOOD MICROBIOLOGY	<ol style="list-style-type: none"> <li>1. Understand the general morphology and the growth inhibiting and promoting factors for microorganisms.</li> <li>2. Categorize the sources, contamination and type of spoilage</li> <li>3. Enumerate food poisoning food born hazards and food intoxication of microbial origin to ensure food safety.</li> <li>4. Learn about the Principles of preservation by high and low temperature and new trends in preservation</li> </ol>
CORE ELECTIVE A.FOOD STANDARD AND QUALITY CONTROL	<ol style="list-style-type: none"> <li>1. The control of quality and use of additives is known.</li> <li>2. Knowledge on the standards for food quality and food laws is obtained.</li> <li>3. Discuss on the food safety measures and importance of food labelling in the food Items purchased.</li> </ol>
B.HOSPITAL FOOD SERVICE	<ol style="list-style-type: none"> <li>1. Understand the principles of food service</li> <li>2. Gain knowledge on meal planning</li> <li>3. Describe the hygiene and sanitation followed in food service unit</li> <li>4. Distinguish tool of management</li> </ol>
C.TXTILES AND CLOTHING IN HUMAN CARE	<ol style="list-style-type: none"> <li>1. Classify the fibres and explain its properties.</li> <li>2. Assess the types and properties of yarns.</li> <li>3. Compile the fabric construction techniques.</li> <li>4. Describe the process and agents in stain removal.</li> <li>5. Determine the laundering procedures for various fabrics.</li> </ol>
CONTEMPORARY LITERARY THEORY - I	<ol style="list-style-type: none"> <li>1. It reinforces the student's literary competence.</li> <li>2. The students will develop an independent critical persona.</li> <li>3. The students can understand the various types of theories Theories after the 20th century is learned</li> </ol>
OPEN ELECTIVE A.BAKERY SCIENCE	<ol style="list-style-type: none"> <li>1. An understanding about ingredients used for baking and how their characteristics are gain knowledge about the appropriate preparation, mixing, make-up, baking,decorating and presenting of baked products.</li> <li>2. Describe and apply appropriate sanitation, health and safety practices in baking</li> <li>3. Demonstrate the safe operation, cleaning, maintenance and storage of baking equipment and utensils</li> </ol>
B.HOME SCALE PRESERVATION OF FRUITS AND VEGETABLES	<ol style="list-style-type: none"> <li>1. Gain expertise to preserve fruits and vegetables at home scale level</li> <li>2. Apply the skill in improving the quality of the preserved food products</li> <li>3. Excel in the field of applying fermentation techniques</li> <li>4. Enhance the knowledge on usage of sugar, salt and chemicals in fruits and vegetables</li> <li>5. Become as an entrepreneur in small scale food industries.</li> </ol>
C.LIFESTYLE PRACTICES	<ol style="list-style-type: none"> <li>1. Relate nutritional requirement for various stages of life.</li> <li>2. Plan a balanced diet.</li> <li>3. Distinguish between healthy and unhealthy life style practices.</li> </ol>

	4. Correlate life style practices with health outcomes. 5. Practice and promote healthy life style practices.
<b>SEMESTER III</b>	
<b>RESEARCH METHODOLOGY AND APPLIED STATISTICS</b>	1. Gain knowledge to design the tools for collection, identify the samples, interpretation of data with the use of tables and pictorial representations. 2. Assess the numerical data for providing statistical evidences to support the research results. 3. Enable to become a qualified researcher.
<b>COMMUNITY NUTRITION</b>	1. Gaining knowledge on nutritional programmes and policies for overcoming malnutrition 2. Understanding the national, international and voluntary nutritional organizations to combat malnutrition 3. Able to organize community nutrition education programme to promote the nutritional knowledge of the community 4. Apply intervention programmes to overcome epidemic of communicable diseases. 5. Application of the principles of massive supplementary feeding and food safety for the welfare of the community
<b>CORE ELECTIVE A.NUTRITION IN EMERGENCIES</b>	1. Gaining knowledge on Natural / manmade disasters resulting in emergency situations. 2. Understanding the Nutritional problems common among the vulnerable groups in emergencies 3. Able to assess the nutritional status of the community 4. Gain knowledge on Scope of assessment of malnutrition in emergencies. 5. Apply intervention programmes to overcome malnutrition in emergencies 6. Application of the principles of massive supplementary feeding and food safety for the welfare of the community
<b>B. FUNCTIONAL FOODS AND NUTRACEUTICALS</b>	1. Gain knowledge on sources of functional foods and nutraceuticals. 2. Acquire skills to categorize nutraceuticals. 3. Gain awareness on the functional foods and nutraceuticals of microbial origin. 4. Obtain knowledge of functional foods and nutraceuticals in health and diseases. 5. Understand the regulatory aspects of functional foods and nutraceuticals.
<b>C.PRINCIPLES OF FOOD ANALYSIS</b>	1. Apply knowledge on nutrients analysis 2. Understand the types and techniques of chromatography 3. Acquire skill to extract food pigments 4. Gain knowledge about chemical properties of food
<b>OPEN ELECTIVE A.PRINCIPLES OF NUTRITION I</b>	1. Gain knowledge on Role of Macro and Micro minerals in our body 2. Understand the deficiency symptoms of minerals



	3. Knowledge on various trace element
B.NUTRITION EDUCATION AND COUNSELLING	<ol style="list-style-type: none"> <li>1. Enable competency as nutrition educators and counselors.</li> <li>2. Able organizers of nutrition education and intervention programmes.</li> <li>3. Conceptualize and develop audiovisual aids for nutrition education</li> </ol>
C. ASSESSMENT OF NUTRITIONAL STATUS	<ol style="list-style-type: none"> <li>1. Critically evaluate methodologies for nutritional assessment</li> <li>2. Describe the current state of epidemiological evidence for relationships of diet to the development of selected diseases</li> <li>3. Interpret and evaluate epidemiological data in relation to nutrition and health</li> <li>4. Create a database on nutritional assessment and epidemiology for target groups</li> </ol>
<b>SEMESTER IV</b>	
DIET THERAPY	<ol style="list-style-type: none"> <li>1. Understand the concept of therapeutic nutrition as nutritional care and support</li> <li>2. Learn the formulation of therapeutic diets and feeding techniques</li> <li>3. Categorize the diseases, disorders and deficiencies for Planning suitable of therapeutic diets</li> <li>4. Update knowledge on advanced techniques and concept of diet planning and of therapeutic diet counseling</li> <li>5. Take up as a Dietitian in the hospitals.</li> </ol>
CORE ELECTIVE A.FOOD BIOTECHNOLOGY	<ol style="list-style-type: none"> <li>1. Gain knowledge on the techniques and application of genetic engineering in food science and technology</li> <li>2. Understand the applications of enzyme technology in food industries.</li> <li>3. Application of biotechnology to food products especially Yeast based processes and products</li> <li>4. Gain knowledge related to Application of enzymes in food and beverages industries</li> <li>5. Learn about the Application of Nano biotechnology in food industry and also in food packaging,</li> </ol>
B.FOOD SAFETY AND NUTRITION SECURITY	<ol style="list-style-type: none"> <li>1. Describe the food safety issues</li> <li>2. Apply knowledge on National and International Food Safety Laws and Regulations</li> <li>3. Understand the personal hygiene</li> <li>4. Acquire skills on food additives</li> </ol>
C.COMPUTER APPLICATIONS IN FOOD SCIENCE AND NUTRITION	<ol style="list-style-type: none"> <li>1. Gain knowledge on computer applications in food and nutrition</li> <li>2. Understand the computer networking system</li> <li>3. Apply knowledge on MS office</li> </ol>
OPEN ELECTIVE A.PRINCIPLES OF NUTRITION II	<ol style="list-style-type: none"> <li>1. Describe types of vitamins</li> <li>2. Understand the essentials of vitamins</li> <li>3. Knowledge on Macro and Micro minerals</li> </ol>

	4. Gain knowledge on trace elements and its deficiency diseases
B.NUTRITION IN SPECIAL CONDITION	<ol style="list-style-type: none"> <li>1. Understand the sports nutrition</li> <li>2. Gain knowledge on nutritional needs during emergency</li> <li>3. Describe space food systems</li> </ol>
C.TECHNIQUE OF FOOD EVALUATION	<ol style="list-style-type: none"> <li>1. Describe evaluation of food quality</li> <li>2. Gain knowledge on sensory tests</li> <li>3. Understand the microbial quality of food</li> </ol>